## PEROPT DOCUMENTATION PAGE

Form Approved
OMB No 0704-0184

AD-A238 464

is estimated to average. I hour per response including the time for reviewing instructions, searching easting data withing and reviewing the collection of information. Send comments regarding this burden estimate or an other access of ing this burden to Washington Headquarters Services, Directorate for information Operations and Reports. 1973 Jenes 3 to the Office of Management and Budget, Paperwork Reduction Project (07:04-0188), Washington, CC 20503.

REPORT DATE

3. REPORT TYPE AND DATES COVERED Final Report

S. FUNDING NUMBERS

Viscous Profiles and Numerical Methods for Shock Waves

DAALO3-90-G-0011

6. AUTHOR(S)

Michael Shearer

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

North Carolina State University Box 7003

Raleigh, North Carolina 27695-7003

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U. S. Army Research Office

P. O. Box 12211

Research Triangle Park, NC 27709-2211

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

ARD 26807.1-MA-CF

11. SUPPLEMENTARY NOTES

The view, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army positior, policy, or decision, unless so designated by other documentation.

12a. DISTRIBUTION / AVAILABILITY STATEMENT

126. DISTRIBUTION CODE

Approved for public release; distribution unlimited.

13. ABSTRACT (Maximum 200 words)

A workshop on shock waves was held at North Carolina State University, May 23-25, 1990. The workshop brought together mathematicians interested in the following areas related to shock waves: the theory of hyperbolic conservation laws, numerical methods for hyperbolic and parabolic systems of equations, the theory of travelling waves (viscous profiles) for parabolic systems, and applications.

91-05254

14.	SU	BII	CT	ΤE	RM5
-----	----	-----	----	----	-----

Shock waves

15. NUMBER OF PAGES

16. PRICE CO

17. SECURITY CLASSIFICATION OF REPORT

UNCLASSIFIED

7 10 -1

18. SECURITY CLASSIFICATION

9. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED

20. LIMITAT

ABSTRACT

UNCLASSIFIED NSN 7540-01-280-5500

Standard Form 298 (Rev. 2.14

UL

## VISCOUS PROFILES AND NUMERICAL METHODS FOR SHOCK WAVES

FINAL REPORT

MICHAEL SHEARER

U.S. ARMY RESEARCH OFFICE

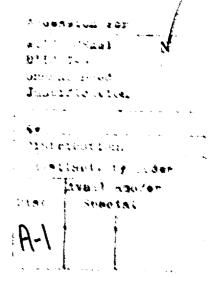
GRANT NUMBER DAAL03-90-G-0011

NORTH CAROLINA STATE UNIVERSITY

APPROVED FOR PUBLIC RELEASE

DISTRIBUTION UNLIMITED





## Final Report

A workshop on shock waves was held at North Carolina State University, May 23-25, 1990. The workshop brought together mathematicians interested in the following areas related to shock waves: the theory of hyperbolic conservation laws, numerical methods for hyperbolic and parabolic systems of equations, the theory of travelling waves (viscous profiles) for parabolic systems, and applications.

A volume of proceedings is being published by SIAM, the Society for Industrial and Applied Mathematics. The papers in the volume of proceedings reflect the considerable breadth of interests in analysis and applications at the workshop. Consequently, this volume is a rough survey of current mathematical work in the area of shock waves, and provides a rich source of ideas and problems in theoretical and numerical aspects of the field and its many applications. One theme of the meeting that is strongly represented in the proceedings is the power of ideas from dynamical systems that are being adapted and developed in the context of shock waves. A related theme, the approximation and stability of shock waves, is treated in several papers. Applications are another prominent feature of these proceedings. Many of the papers on applications present models that are comparatively new to the mathematics community, with interesting phenomena and ideas for their interpretation.